

25

be consumed if 3P agent 3P5 had to generate responsive content that prompted for a value for the “car size” parameter).

FIG. 7 illustrates another client device 706 and a display screen 740 of the client device 706. The client device 706 may include and/or be in communication with the automated assistant 110. The display screen 740 includes a reply interface element 788 that the user may select to generate user input via a virtual keyboard and a voice reply interface element 789 that the user may select to generate user input via a microphone. In some implementations, the user may generate user input via the microphone without selection of the voice reply interface element 789. For example, during the dialog session, active monitoring for audible user interface input via the microphone may occur to obviate the need for the user to select the voice reply interface element 789. In some of those and/or in other implementations, the voice reply interface element 789 may be omitted. Moreover, in some implementations, the reply interface element 788 may additionally and/or alternatively be omitted (e.g., the user may only provide audible user interface input). The display screen 740 also includes system interface elements 781, 782, 783 that may be interacted with by the user to cause the client device 710 to perform one or more actions.

In FIG. 7, the dialog is similar to that of FIG. 4 and occurs via a common automated assistant interface as in FIG. 4 (although it is a different interface than that of FIG. 4). However, FIG. 7 illustrates some examples of how interactions may differ when different interfaces are used and/or different user interface input devices are available.

In FIG. 7, the user provides typed or spoken input 780A of “Buy 2 adult tickets for Movie A for tonight”. Based on the input, the automated assistant 110 may determine an intended action of “buy movie ticket”. The automated assistant 110 may further determine a value of “2” for the parameter of “number of adult tickets”, and a value of “Movie A” (or associated identifier) for the parameter of “movie name”.

The automated assistant 110 may further determine an additional mandatory parameter of “theater location” that is defined for the “buy movie ticket” intended action is not specified by the input 780A. In response, the automated assistant 110 may generate and provide the prompt 782A to solicit a value for the mandatory parameter. It is noted that in FIG. 7 the user may “tap” either of the underlined “Here” terms to select a corresponding theatre without providing further spoken or typed text input. However, the user instead provides spoken or typed input 780B of “Baxter Avenue”.

Based on the input 780B, the automated assistant 110 may determine “Baxter Avenue Theater” (or associated identifier) as a value for the mandatory parameter of “theatre location”. The automated assistant 110 may further determine that two 3P agents (“3P1” and “3P2”) are able to perform the “buy movie ticket” intended action with the values of “2”, “Movie A”, and “Baxter Avenue Theatre”.

The automated assistant 110 further generates and provides the prompt 782B that identifies those selected 3P agents, as well as values for an additional unspecified parameter (price) for each of the 3P agents. It is noted that in FIG. 7 the user may “tap” the underlined “3P1” to select the corresponding agent or may “tap” the underlined “3P2” to select the corresponding agent. The user may also optionally be able to provide spoken or typed input.

In the example of FIG. 7, the user taps the underlined “3P2”. In response to the responsive “tap” input, the automated assistant selects 3P agent 3P2. The automated assis-

26

tant 110 may then send an invocation request to 3P agent 3P2, along with determined values for parameters.

The 3P agent 3P2 then effectively or actually takes over the dialog and prompt 782C is provided based on responsive content generated by 3P agent 3P2. Prompt 782C may be provided directly by 3P agent 3P2 and/or via the automated assistant 110. The dialog may further continue as indicated by the ellipsis in FIG. 7.

FIG. 8 is a block diagram of an example computing device 810 that may optionally be utilized to perform one or more aspects of techniques described herein. In some implementations, one or more of device 106, automated assistant 110, a 3P agent, and/or other component(s) may comprise one or more components of the example computing device 810.

Computing device 810 typically includes at least one processor 814 which communicates with a number of peripheral devices via bus subsystem 812. These peripheral devices may include a storage subsystem 824, including, for example, a memory subsystem 825 and a file storage subsystem 826, user interface output devices 820, user interface input devices 822, and a network interface subsystem 816. The input and output devices allow user interaction with computing device 810. Network interface subsystem 816 provides an interface to outside networks and is coupled to corresponding interface devices in other computing devices.

User interface input devices 822 may include a keyboard, pointing devices such as a mouse, trackball, touchpad, or graphics tablet, a scanner, a touchscreen incorporated into the display, audio input devices such as voice recognition systems, microphones, and/or other types of input devices. In general, use of the term “input device” is intended to include all possible types of devices and ways to input information into computing device 810 or onto a communication network.

User interface output devices 820 may include a display subsystem, a printer, a fax machine, or non-visual displays such as audio output devices. The display subsystem may include a cathode ray tube (CRT), a flat-panel device such as a liquid crystal display (LCD), a projection device, or some other mechanism for creating a visible image. The display subsystem may also provide non-visual display such as via audio output devices. In general, use of the term “output device” is intended to include all possible types of devices and ways to output information from computing device 810 to the user or to another machine or computing device.

Storage subsystem 824 stores programming and data constructs that provide the functionality of some or all of the modules described herein. For example, the storage subsystem 824 may include the logic to perform selected aspects of the method(s) of FIGS. 2A, 2B, and/or 3.

These software modules are generally executed by processor 814 alone or in combination with other processors. Memory 825 used in the storage subsystem 824 can include a number of memories including a main random access memory (RAM) 830 for storage of instructions and data during program execution and a read only memory (ROM) 832 in which fixed instructions are stored. A file storage subsystem 826 can provide persistent storage for program and data files, and may include a hard disk drive, a floppy disk drive along with associated removable media, a CD-ROM drive, an optical drive, or removable media cartridges. The modules implementing the functionality of certain implementations may be stored by file storage subsystem 826 in the storage subsystem 824, or in other machines accessible by the processor(s) 814.